U. S. ENVIRONMENTAL PROTECTION AGENCY
REGION V
SURVEILLANCE AND ANALYSIS DIVISION
ILLINOIS DISTRICT OFFICE

Compliance Monitoring Report

Facility

Caterpillar Tractor Company
P.O. Box 504
Joliet, Illinois 60434

Phone: 815-729-5511

Date of Evaluation: August 6, 1975

Participants

Caterpillar Tractor Company

Dave Bezk, Staff Engineer

USEPA

Russell J. Martin, Chemical Engineer

IEPA

State representatives were invited but did not attend.

Description of Facilities

The Caterpillar Tractor Company's Joliet, Illinois plant manufactures assembled hydraulic components, blades and scrapers used in the final assembly of the company's earthmoving equipment. Plant processes include painting, welding, grinding, drilling and other machining of tractor components. Final assembly of tractors is performed at other Caterpillar plants. The plant has an approximate employment of 6,000. At the time of inspection the plant was operating at nearly full capacity.

Miscellaneous Pollution Controls

Fugitive dust control within the plant building is maintained by baghouses which vent inside of the building. Emissions from the six paint booths which use exempt solvent (no harmful organic vapors) as required by the State of Illinois use a water spray system and

venturi scrubbers to control emissions.

The solid waste incinerator listed in NEDS data has been replaced by a vacuum filter and liquid sludge compactor system. Waste sludge is taken to a company landfill.

Fabrication Building

This building is separated from the Caterpillar Joliet facilities by a half mile. Two twin boilers, rated at 30,000# per hour of steam, are utilized for heat and power generation. These boilers are gas fired only. At the time of inspection these boilers were operating at about 4,000# of steam per hour and no emissions were observed.

Power Plant

The main power plant consists of four boilers described below. When coal is used, a Southwestern Illinois coal of 4% sulfur and 10% fly ash is utilized. The yearly use of boiler power is 42% for heating, 32% for process and 16% transient loss. Three boilers operate during winter when the heating demand increases but at the time of inspection only boiler #4 was fired. Waste gas from each boiler is vented out of a 100' black steel stack.

Boiler #1 - A gas fired boiler rated at 80,000# of steam per hour. This boiler was down for retubing at the time of inspection.

Boiler #2 - A gas or coal fired spreader stoker boiler rated at 80,000# of steam per hour. A western precipitator and multi-cyclone system is used if the boiler is coal fired. The rated efficiency of this system is 93% for particles greater than 10 microns in size. A recently installed double alkali (NAOH) wet scrubber system is used for sulfur oxides for this boiler, and also for boiler #3 and #4. This system, which was operational last year, has a rated efficiency of 99%. Boiler #2 was down during the inspection.

Boiler #3 - A coal fired spreader stoker boiler rated at 100,000# of steam per hour. Removal facilities identical to boiler #2 are utilized to control particulates and sulfur oxides. Boiler #3 was down during the inspection.

Boiler #4 - A gas or coal fired spreader stoker boiler rated at 100,000# of steam per hour. Removal facilities identical to boiler #2 are utilized to control particulates and sulfur oxides. Boiler #4 was operating at 50,000# of steam per hour on natural gas at the time of the inspection and therefore pollution control facilities were being bypassed.

Results of Evaluation

Conditions for the visible emissions evaluation were excellent. The sky cover was variable ranging from clear to cloudy. The wind was steady.

The evaluation results are as follows:

(1) Fugitive baghouses and paint spray booths - operating and no emissions observed (other than steam).

(2) Building F boilers 1 and 2 - operating and no emission observed.

(3) Main boilers 1, 2 and 3 - not operating.

(4) Main boiler 4 - operating and no emission observed.

Russell J. Martin

Report prepared by: Russell J. Martin
August 26, 1975

Attachments
1. Visible Emission Evaluator's Report
2. Site Sketch

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

SUBJECT: Visible Emission Evaluator's Report to Envorcement for Case Development

DATE: August 28, 1975

FROM: Chief, Air Surveillance Branch

TO: Chief, Air Section, Enforcement Branch
ATTN: Attorney-of-Record

I. Source Identification:

Company Name: Caterpillar Tractor Company

Address: Joliet, Illinois 60434

II. Regulation: Illinois Rule 202b

III. Evaluator's report of sources observed that showed no visible emissions:

Process or Source	Fabrication Building Boiler #1	Fabrication Building Boiler #2	Fugitive Dust Control - Main Building	Paint Booths
Date	August 6, 1975	August 6, 1975	August 6, 1975	August 6, 1975
Time (CDT) From To	1530-1600	1530-1600	1430-1500	1430-1500
Operating	Yes	Yes	Yes	Yes
Control Device	None	None	Baghouse	Water curtain & venturi scrubbers
Potential Emission Point	50' Stack	50' Stack	Baghouse vent	Steel stacks on roof
Remarks:	Gas fired only	Gas fired only		Steam plume only

Name of expert witness who can testify to the above:

Russell J. Martin, Chemical Engineer, Certified 4/24/75

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III. Evaluator's report of sources observed that showed no visible emissions:

MAIN POWER PLANT

Process or Source	Boiler #1	Boiler #2	Boiler #3	Boiler #4
Date	August 6, 1975	August 6, 1975	August 6, 1975	August 6, 1975
Time (CDT) From To	1500-1530	1500-1530	1500-1530	1500-1530
Operating	No	No	No	Yes
Control Device	None	Precipitator & multi-cyclones scrubber (NAOH)	Precipitator & multi-cyclones scrubber (NAOH)	Precipitator & multi-cyclones scrubber (NAOH)
Potential Emission Point	100' Black Steel Stack	100' Black Steel Stack	100' Black Steel Stack	100' Black Steel Stack
Remarks:	Gas fired only			Gas fired at time of inspection

Name of expert witness who can testify to the above:
Russell J. Martin, Chemical Engineer, Certified 4/24/75

Attachment 2

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION V
ILLINOIS DISTRICT OFFICE
1819 W. PERSHING RD.
CHICAGO, ILLINOIS 60609

COMPLIANCE MONITORING SURVEY
CATERPILLAR TRACTOR CO.
JOLIET, ILLINOIS
AUGUST 6, 1975